

Calendar No. 155

106TH CONGRESS }
1st Session

SENATE

{ REPORT
106-77

NATIONAL AERONAUTICS AND SPACE AD-
MINISTRATION AUTHORIZATION ACT, FIS-
CAL YEARS 2000, 2001, AND 2002

REPORT

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 342



JUNE 16, 1999.—Ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

69-010

WASHINGTON : 1999

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

JOHN McCAIN, Arizona, *Chairman*

TED STEVENS, Alaska	ERNEST F. HOLLINGS, South Carolina
CONRAD BURNS, Montana	DANIEL K. INOUE, Hawaii
SLADE GORTON, Washington	JOHN D. ROCKEFELLER IV, West Virginia
TRENT LOTT, Mississippi	JOHN F. KERRY, Massachusetts
KAY BAILEY HUTCHISON, Texas	JOHN B. BREAUX, Louisiana
OLYMPIA SNOWE, Maine	RICHARD H. BRYAN, Nevada
JOHN ASHCROFT, Missouri	BYRON L. DORGAN, North Dakota
BILL FRIST, Tennessee	RON WYDEN, Oregon
SPENCER ABRAHAM, Michigan	MAX CLELAND, Georgia
SAM BROWNBACK, Kansas	

MARK BUSE, *Staff Director*

MARTHA P. ALLBRIGHT, GENERAL COUNSEL

IVAN A. SCHLAGER, *Democratic Chief Counsel and Staff Director*

KEVIN KAYES, *Democratic General Counsel*

(II)

Calendar No. 155

106TH CONGRESS }
1st Session }

SENATE

{ REPORT
106-77

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT, FISCAL YEARS 2000, 2001, AND 2002

JUNE 16, 1999.—Ordered to be printed

Mr. MCCAIN, from the Committee on Commerce, Science, and
Transportation, submitted the following

REPORT

[To accompany S. 342]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 342), “A bill to authorize appropriations to the National Aeronautics and Space Administration for fiscal years 2000, 2001, and 2002, and for other purposes”, having considered the same, reports favorably thereon with amendments and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The purpose of the bill as reported is to authorize appropriations for the National Aeronautics and Space Administration (NASA) totaling \$13,583,400,000 for fiscal year (FY) 2000, \$13,967,471,000 for FY 2001, and \$14,214,256,720 for FY 2002 as follows:

Fiscal Year 2000	Committee Authorization
International Space Station	\$2,282,700,000
Launch Vehicle and Payload Operations	\$3,180,300,000
Science, Aeronautics, and Technology	\$5,604,700,000
Mission Support	\$2,494,900,000
Inspector General	\$20,800,000

Fiscal Year 2001	Committee Authorization
International Space Station	\$2,328,000,000
Launch Vehicle and Payload Operations	\$3,279,959,000
Science, Aeronautics, and Technology	\$5,768,341,000
Mission Support	\$2,569,747,000
Inspector General	\$21,424,000

Fiscal Year 2002	Committee Authorization
International Space Station	\$2,091,000,000
Launch Vehicle and Payload Operations	\$3,387,458,000
Science, Aeronautics, and Technology	\$6,066,892,000
Mission Support	\$2,646,840,000
Inspector General	\$22,066,720

BACKGROUND AND NEEDS

In the past, the main challenges NASA faced were technological. Today, NASA faces a new set of challenges which are budgetary as well as technical, but no less challenging than the Apollo missions to the Moon.

Over the last several years NASA has conducted a comprehensive review of its entire operation to identify potential areas for cost savings, has begun new technology programs to reduce the cost of access to space and of space science and exploration missions, and has committed the agency to reducing its workforce from 25,000 full time equivalents (FTE) to fewer than 18,000 by the end of FY 2000. There is broad appreciation for the difficulty in making these budget cuts while at the same time fulfilling a commitment to major multi-billion-dollar initiatives like the International Space Station and Earth Science.

To successfully meet these new budget and program challenges, NASA cannot settle for marginal changes, but must reassess its traditional ways of doing business. In carrying out its goals and missions, NASA will need, when feasible and practical, to increase its use of cost-sharing partnerships with industry, academia, and non-federal entities, and with other space-faring nations when those partnerships are cost-effective and provide enhancement. The agency should also explore in greater depth possibilities for privatizing those activities that can be more cost-effectively performed by the private sector and strengthen its commitment to purchasing goods and services on a commercial basis when economically feasible to the taxpayer. NASA should further explore all possibilities of using small business as a means of reducing costs and improving efficiencies.

Equally important in justifying its budget, NASA must make special efforts to ensure that its missions and programs are relevant to both the individuals and interests directly involved, as

well as the general public. For instance, the research conducted through NASA's Earth Science program, if managed properly, has the potential to provide amounts of information that would be beneficial to the public in such diverse areas as agriculture, forestry, mineral exploration, water resource management, and land-use planning. Similarly, NASA's space education and outreach activities like the Experimental Program to Stimulate Competitive Research, the Teacher Resource Centers, and the Space Grant Program have proven very effective in giving citizens of all ages and backgrounds, as well as a broad range of government, private sector, and academic institutions, a stake in the U.S. space program and our ongoing technological revolution. NASA should continue to maintain these important education and outreach activities.

As NASA addresses these and other budgetary and programmatic challenges, it is important that safety continue to be a top priority. Technological risk is an unavoidable necessity as we move our space program forward. Safety should continue to be a top priority out of concern for the lives of the people who make the U.S. space program a success. Risk assessment and management will take on increasing importance as NASA continues the assembly of the International Space Station. This effort will require astronauts to perform an unprecedented number of spacewalks to build, maintain, and operate the International Space Station and will force the Space Shuttle Program to satisfy unusually high launch demands.

This authorization legislation for FY 2000, FY 2001, and FY 2002 is intended to provide the agency with the funding and policy guidance to maintain a robust and balanced space program in this environment. Adequate funding along with sound fiscal management by NASA are critical components to the future success of the agency.

LEGISLATIVE HISTORY

On February 1, 1999, the Administration submitted its FY 2000 budget request for NASA to the Congress. The Subcommittee on Science, Technology, and Space held an oversight hearing, chaired by Senator Frist, on April 29, 1999 to discuss the FY 2000 budget and programs of NASA, at which time testimony was heard from NASA Administrator Daniel S. Goldin; Mr. Allen Li, Associate Director, National Security and International Affairs, U.S. General Accounting Office; and Ms. Roberta Gross, Inspector General, NASA.

On February 3, 1999, Senator Frist, along with Senators McCain and Burns introduced S. 342, a bill to authorize appropriations for NASA for FY 2000, FY 2001, and FY 2002. On May 5, 1999, the Committee met in executive session and, on a voice vote, ordered the bill, as amended, reported.

SUMMARY OF MAJOR PROVISIONS

For FY 2000, the bill, as reported, authorizes a total of \$13,583,400,000 for NASA.

For FY 2001, the bill, as reported, authorizes a total of \$13,967,471,000 for NASA.

For FY 2002, the bill, as reported, authorizes a total of \$14,214,256,720 for NASA.

For FY 2000, the \$13,583,400,000 authorized for NASA is allocated among its major accounts as follows: \$2,282,700,000 for the International Space Station; \$3,180,300,000 for Launch Vehicle and Payload Operations; \$5,604,700,000 for Science, Aeronautics, and Technology; \$2,494,900,000 for Mission Support; and \$20,800,000 for the Office of the Inspector General (OIG).

For FY 2001, the \$13,967,471,000 authorized for NASA is allocated among its major accounts as follows: \$2,328,000,000 for the International Space Station; \$3,279,959,000 for Launch Vehicle and Payload Operations; \$5,768,341,000 for Science, Aeronautics, and Technology; \$2,569,747,000 for Mission Support; and \$21,424,000 for the OIG.

For FY 2002, the \$14,214,256,720 authorized for NASA is allocated among its major accounts as follows: \$2,091,000,000 for the International Space Station; \$3,387,458,000 for Launch Vehicle and Payload Operations; \$6,066,892,000 for Science, Aeronautics, and Technology; \$2,646,840,000 for Mission Support; and \$22,066,720 for the OIG.

The FY 2000 levels are consistent with the President's budget request with the following exceptions: a reduction of \$200 million for the International Space Station account; an increase of \$30 million for the Academic Programs; an increase of \$25 million for additional Shuttle upgrades; and an increase of \$150 million for a new Future Planning category under the Science, Aeronautics, and Technology account. This Space Station reduction eliminates the funding requested under the Russian Program Assurance activities account.

The FY 2001 and FY 2002 levels represent a 3 percent increase over the previous year's amount except with respect to the International Space Station, Space Shuttle Upgrades, and Future Planning. The International Space Station has been authorized in accordance with NASA outyear projections for FY 2001 and FY 2002. The Space Shuttle Upgrades have been increased by \$42 million and \$24 million for FY 2001 and FY2002, respectively. The Future Planning was held constant for FY 2001 and increased by \$130 million for FY 2002.

International Space Station

The reported bill contains a limitation on the development costs for the International Space Station. The cost cap language provides NASA with additional funding for Space Station development and allows for additional Space Shuttle flights by exempting certain activities at the point when research, operating and crew return vehicles activities' costs comprise more than 95 percent of the annual funding for the Station. At this point in the program, the majority of the activities are truly beyond the development phase of the project. The Administrator is required to provide, as part of the annual budget request, a written notice of any changes to the cost limitations based on the exclusions set forth in the bill. This notice shall also include explanation of the basis of the change, including the costs associated with the change and the expected benefit to the program, and an assessment of the impact on the assembly

schedule and future funding estimates. According to NASA, the recent cost increases on the Space Station falls within the exclusions outlined in the cost cap language.

The reported bill provides for liability cross-waivers for the Space Station. The provision authorizes, but does not require, NASA to enter into agreements with any cooperating party participating in the Space Station program whereby all involved parties agree to take the risk of damage for their own assets and agree not to sue other parties to the agreement for such damage. These cross waivers would not apply in cases of sabotage or other deliberate and willful acts.

The reported bill authorizes \$2,282,700,000 for FY 2000, \$2,328,000,000 for FY 2001, and \$2,091,000,000 for FY 2002 for the International Space Station.

Funding levels for the International Space Station for FY 2001 and FY 2002 are provided at levels equal to the requirements stated in the Administration's FY 2000 budget request.

Launch Vehicle and Payload Operations

The reported bill would authorize \$3,180,300,000 for the Launch Vehicle and Payload Operations program for FY 2000 which includes the Space Shuttle Operation and Space Shuttle Safety and Performance upgrades. \$3,279,959,000 is authorized for FY 2001, and \$3,387,458,000 is authorized for FY 2002. This account includes funding for Space Shuttle Operations, Space Shuttle Safety and Operations, and Payload and Utilization Operations. Funding for Space Shuttle Operations would include hardware production, ground processing, launch and landing, mission operations, flight crew operations, training, logistics, and sustaining engineering. Funding for Space Shuttle Safety and Performance Upgrades would provide for modifications and improvements to the flight elements and ground facilities, including expansion of safety and operating margins and enhancement of Space Shuttle capabilities as well as the replacement of obsolete systems. Funding for Payload and Utilization Operations also supports the processing and flight of Shuttle payloads and NASA payloads on Expendable Launch Vehicles (ELV) to ensure maximum return on research investment, efforts to reduce operations costs, and the implementation of flight and ground systems improvements, and support strategic investments in advanced technology needed to meet future requirements.

Space Science

The reported bill would authorize \$2,196,600,000 for FY 2000, \$2,262,498,000 is authorized for FY 2001, and \$2,330,373,000 for FY 2002. The funding level will permit a continuation of NASA's ongoing space science activities in physics, astronomy, and planetary exploration, including Thermosphere, Ionosphere, Mesosphere, Energetics and Dynamics (TIMED), the Relativity Mission, the Gravity Probe-B (GPB) program, the Explorer program, the Hubble Space telescope, the Discovery program, the Mars Surveyor mission, the Stratospheric Observatory for Infrared Astronomy (SOFIA), and the Space Infrared Telescope Facility (SIRTF). The bill would also support the budget request for the New Millennium program, an important initiative to develop technologies that will

enable more frequent and less costly space missions on smaller spacecraft.

Life and Microgravity Sciences and Applications

The reported bill would authorize \$256,200,000 for FY 2000, \$263,886,000 for FY 2001, and \$271,803,000 for FY 2002 for the life and microgravity sciences and applications program. The purpose of this program is to use the space environment to better understand the response of biological and materials systems to weightlessness. The authorized levels will support continuation of NASA's ongoing research in the space biological, physical, and chemical sciences, and related work in technology development and applications.

Earth Science

The reported bill would authorize \$1,459,100,000 for FY 2000, \$1,502,873,000 for FY 2001, and \$1,547,959,000 for FY 2002 to fully fund the Earth Science Program, NASA's effort to employ the latest satellite technology to understand and predict the global climate trends, and human impacts on the environment, that affect our daily lives. The Earth Science program is NASA's contribution to the multi-agency U.S. Global Change Research Program. The authorized amount assumes full funding for each of the program's main components including: the Earth Observing System (and Landsat), the Earth Observing System Data and Information System, Earth Probes, and research and data analysis.

Aeronautics and Space Transportation Technology

The reported bill authorizes \$1,006,500,000 for FY 2000, \$1,036,695,000 for FY 2001, and \$1,067,796,000 for FY 2002. This account provides for funding for three programs: (1) Aeronautical Research and Technology; (2) Advanced Space Transportation Technology; and (3) Commercial Technology.

For the Aeronautical Research and Technology program, the reported bill would authorize the FY 2000 requested level of 620,000,000. No specific funding level is being stipulated for FY 2001 and FY 2002, thus providing NASA with the necessary flexibility to ascertain the appropriate level. This program is dedicated to ensuring U.S. leadership in aeronautics and promoting and facilitating the transfer of aeronautics technology to industry and government agencies such as the Department of Defense and the Federal Aviation Administration in order to promote better civilian and military aircraft and a safer national air space system. The authorized level will support continuation of the baseline program, including its subsonic, high-speed, and hypersonic research activities. The Aviation Safety Program is authorized at a level of \$60,000,000 for FY 2000.

For the Advanced Space Transportation Technology program, the reported bill would authorize \$254,000,000 for FY 2000. No specific funding level is stipulated for FY 2001 and FY 2002, in order to provide NASA with flexibility to ascertain the appropriate level. NASA's Advanced Space Transportation Technology program is intended to stimulate the development of advanced space technologies to improve U.S. industrial competitiveness. Included with-

in the authorization is the Reusable Launch Vehicle (RLV) program. The RLV program is aimed at developing and flight testing the fully reusable technologies that may lead to the eventual development of a replacement for the Space Shuttle. Incorporated within the RLV effort are two separate but related experimental flight demonstrator programs: the X-34 Small Reusable Launch Vehicle and the X-33 Advanced Technology Demonstrator. It is anticipated that these activities will develop the key component technologies needed to make dramatic reductions in the cost of access to space. Both programs are expected to make their initial test flights during FY 2000.

For the Commercial Technology program, the reported bill would authorize \$132,500,000 for FY 2000. No specific funding level is stipulated for FY 2001 and FY 2002, in order to provide NASA with flexibility to ascertain the appropriate level. NASA's Commercial Technology Program is to share the technology program results with the United States industrial community. The technology commercialization program is intended to assure that NASA's technology developments contribute to a significant improvement in the quality of American life and an increase in America's international competitiveness.

Mission Communications Services

The reported bill would authorize Mission Communications Services at the President's FY 2000 budget request level of \$406,300,000. This authorized level will provide sufficient support for NASA's vast ground and space-based communications systems, which are essential to every NASA space mission. \$418,489,000 is authorized for FY 2001 and \$431,044,000 is authorized for FY 2002, which provides a modest 3 percent increase for this activity.

Academic Programs

The reported bill would authorize NASA's Academic Programs at \$130,000,000 for FY 2000, \$133,900,000 for FY 2001, and \$137,917,000 for FY 2002. For FY 2000, the authorized amount is \$30,000,000 above the President's request, providing for enhanced education programs, at the K-12 level, at Historically Black Colleges and Universities and other minority-serving institutions, and through the Experimental Program to Stimulate Competitive Research (EPSCoR). NASA's Academic Programs have played an important role in sustaining U.S. academic achievement in mathematics and science and strengthening mathematics and science education at all levels, from pre-college through graduate school. Within the total authorization, \$10,000,000 is allocated for EPSCoR in FY 2000, \$15,000,000 for FY 2001, and \$20,000,000 for FY 2002. NASA's EPSCoR is a critical source of funds for important academic space science research being conducted in our rural states.

Future Planning (Space Launch)

The reported bill would authorize \$150,000,000 for FY 2000 and FY 2001 and \$280,000,000 for FY 2002 for Future Planning (Space Launch). This authorized level would begin a long-term technology development program intended to reduce space launch costs by 100-fold from the current level of approximately \$10,000 per pound.

Under the reported bill, the program would begin in FY 2000 rather than FY 2001 as planned by the Administration.

Mission Support

The reported bill would authorize Mission Support at the FY 2000 budget request of \$2,494,900,000, \$2,569,747,000 for FY 2001, and \$2,646,839,000 for FY 2002. This program includes safety, mission assurance, engineering, and advanced concepts; space communications systems; research and program management; and construction of facilities.

Funding for Safety, Reliability, and Quality Assurance is designed to develop and implement risk management practices throughout NASA.

The Space Communications Systems account supports the tracking, telemetry, data acquisition, and data processing activities for all NASA spacecraft. Included among these activities is the Tracking and Data Relay Satellite (TDRS) program, which provides operational support for NASA and other domestic and international users of NASA's Space Network for space communications purposes. The funding level also supports the TDRS replenishment program to develop a new series of tracking satellites.

The authorization for Research and Program Management funds the salaries, travel expenses, and other administrative expenses for NASA's personnel.

The Construction of Facilities activity funds the repair and upgrade of existing facilities and the construction of new facilities.

Inspector General

The reported bill would authorize the OIG at \$20,800,000 for FY 2000, \$21,424,000 for FY 2001, and \$22,066,720 for FY 2002. The OIG is a statutorily-created independent organization within NASA charged with investigating cases of fraud, waste, and abuse at the agency.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 25, 1999.

Hon. JOHN MCCAIN,
*Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 342, the National Aeronautics and Space Administration Authorization Act for Fiscal Year 2000, 2001, and 2002.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Kathleen Gramp (for

federal costs), Lisa Cash Driskill (for the state and local impact), and Jean Wooster (for the private-sector impact).

Sincerely,

BARRY B. ANDERSON
(For Dan L. Crippen, Director).

Enclosure.

S. 342—National Aeronautics and Space Administration Authorization Act for Fiscal Years 2000, 2001, and 2002

Summary: S. 342 would authorize appropriations for the National Aeronautics and Space Administration (NASA) for fiscal years 2000 through 2002 and establish federal policies related to those activities. The bill would authorize the agency to sign mutual waivers of liability with domestic entities for activities associated with the space station under certain terms and conditions. It also would authorize NASA to convey property acquired under cooperative agreements to participants in those agreements. NASA would have to prepare several reports related to the space station, including an annual report on the station's costs that would have to be verified by the General Accounting Office (GAO). Other provisions would affect NASA's acquisition of data from commercial vendors, procurement practices, data disclosure, and use of surplus federal property. Finally, S. 342 would prohibit the launch of any payload with obtrusive space advertising by existing and prospective licensees of commercial space transportation systems.

CBO estimates that appropriation of the specified amounts would result in additional discretionary spending of \$41.5 billion over the 2000–2004 period. Implementing S. 342 could affect direct spending and receipts; therefore, pay-as-you-go procedures would apply, CBO estimates, however, that any such effects would not be significant over the next five years.

S. 342 contains no intergovernmental mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments. The bill would impose a new private-sector mandate, but CBO estimates that the cost of this mandate would not exceed the statutory threshold established by UMRA (\$100 million in 1996, adjusted annually for inflation).

Estimated cost to the Federal Government: CBO estimates that implementing S. 342 would increase discretionary spending by a total of \$41.5 billion over the 2000–2004 period, assuming appropriation of the authorized amounts. Authorizing mutual waivers of liability for the space station and allowing NASA to convey tangible property under cooperative agreements could each affect direct spending, but in both cases we estimate that the budgetary effects would not be significant over the 2000–2004 period. Provisions barring the licensing of space payloads with obtrusive advertising could affect receipts, but we estimate that the effects would not be significant. The estimated budgetary impact of S. 342 is shown in the following table. The costs of this legislation fall within budget functions 250 (general science, space, and technology) and 400 (transportation).

	By fiscal years, in millions of dollars—					
	1999	2000	2001	2002	2003	2004
SPENDING SUBJECT TO APPROPRIATION						
NASA Spending Under Current Law:						
Budget Authority ¹	13,665	0	0	0	0	0
Estimated Outlays	13,670	5,195	718	285	0	0
Proposed Changes:						
Authorization Level	0	13,583	13,967	14,214	0	0
Estimated Outlays	0	8,417	13,138	13,843	5,415	717
NASA Spending Under S. 342:						
Authorization Level ¹	13,665	13,583	13,967	14,214	0	0
Estimated Outlays	13,670	13,612	13,856	14,128	5,415	717

¹The 1999 level is the amount appropriated for that year.

Basis of estimate

Spending subject to appropriation

For the purposes of this estimate, CBO assumes that appropriations will be provided near the beginning of each fiscal year and that outlays will follow NASA's historical spending patterns. CBO estimates that GAO's cost to review NASA's accounting of space station costs would not be significant. The provisions regarding cross-waivers of liability and the conveyance of property under cooperative agreements could affect discretionary spending, as explained below, but CBO expects that any such effects would not be significant over the 2000–2004 period.

Direct spending (including offsetting receipts)

Cross-waivers of Liability. Affirming NASA's authority to enter into reciprocal waivers of liability could affect direct spending because it would limit certain claims filed by or against the federal government in the event of an accident or other incident involving the space station. According to NASA, this waiver authority would primarily involve potential users of the space station, such as scientific researchers or commercial companies that may want to send payloads or personnel on the space station. Under such cross-waivers, the federal government would pay for losses or damages to federal employees or property, and the cooperating parties would pay for any losses or damages to their employees or property, regardless of who is responsible for the losses.

From a budgetary perspective, such cross-waivers would preclude the collection of offsetting receipts (a credit against direct spending) in cases where the government otherwise would sue another party and collect damages. At the same time, these cross-waivers would preclude federal payments (which could be mandatory or discretionary spending) to other parties in cases where the federal government otherwise would be liable for damages. Because the space station will be a first-of-a-kind vehicle, CBO has no basis for predicting whether any incidents involving claims will occur or, if an incident did occur, whether this provision would result in a net cost or savings to the federal government relative to current law. NASA considers the risk of such incidents to be very low because of the safety and quality controls that will be imposed on all materials and experiments used on the space station. CBO estimates that the budgetary effects of this provision, if any, would not be significant

until after the space station becomes operational, which under NASA's current plans will not be until fiscal year 2004.

Property Conveyance. Provisions allowing NASA to convey tangible property to a participant in a cooperative agreement could result in a loss of offsetting receipts from the sale of surplus property, but CBO estimates that such costs would not be significant over the 2000–2004 period. Under current policy, such property is jointly owned unless otherwise specified in the agreement. If the government has an ownership right, disposal is governed by federal acquisition laws and regulations, which may result in any surplus property being sold to the private sector. According to NASA officials, cooperative agreements usually do not involve much tangible property, although there are exceptions, such as the cooperative agreement for the X-33, a prototype vehicle to be used to test technologies for a reusable launch vehicle. CBO expects that any loss of offsetting receipts resulting from this provision would not be significant until after 2004 because of the time involved in completing research and disposing of surplus property. In the long run, the cost of this provision would depend on the uses and value of the property involved in future cooperative agreements.

Such conveyances could reduce NASA's cash contribution to a cooperative agreement if the participant would receive property that has value. However, a reduction in NASA's contribution would reduce discretionary spending only if appropriations were reduced by the amount of any savings.

Receipts

Violations of the prohibition on obtrusive space advertising could result in the collection of civil penalties, but CBO estimates that any additional receipts would not be significant. The Department of Transportation has never collected a penalty for a violation of the licensing and related requirements of the commercial space transportation program.

Pay-as-you-go considerations: The Balanced Budget and Emergency Deficit Control Act sets up pay-as-you-go procedures for legislation affecting direct spending and receipts. While several provisions could affect direct spending or receipts, CBO estimates that these effects would not be significant over the 2000–2004 period.

Estimated impact on State, local, and tribal governments: S. 342 contains no intergovernmental mandates as defined in UMRA and would impose no costs on state, local, or tribal governments. Some of the money authorized by the bill would be used for research and development at academic institutions, including public colleges and universities.

Estimated impact on the private sector: The bill would impose a new private-sector mandate as defined by UMRA. CBO estimates that the cost of complying with the mandate would not exceed the annual threshold established under UMRA for private-sector mandates (\$100 million in 1996, adjusted annually for inflation).

S. 342 would prohibit license-holders for commercial space launches from launching a payload containing advertising to be placed in outer space that would be recognized by people on earth without the aid of a telescope or other technological device. Information provided by the Department of Transportation indicates

that no license-holders are preparing to launch such advertising. Therefore, CBO estimates that this new private-sector mandate would impose no direct costs.

Previous CBO estimate: On May 17, 1999, CBO transmitted a cost estimate for H.R. 1654, the National Aeronautics and Space Administration Authorization Act of 1999, as ordered reported by the House Committee on Science on May 13, 1999. Differences between the estimates are attributable to differences in the two bills. For example, the House bill does not include provisions that would authorize cross-waivers of liability with cooperating parties to the space station, allow the conveyance of property acquired under cooperative agreements, or regulate advertising on space transportation vehicles. The House and Senate bills would authorize similar total funding levels for NASA. CBO estimated that implementing H.R. 1654 would cost just under \$41 billion over the 2000–2004 period, while the estimated costs of S. 342 total \$41.5 billion over the same period.

Estimate prepared by: Federal costs: Kathleen Gramp. Impact on State, local, and tribal governments: Lisa Cash Driskill. Impact on the private sector: Jean Wooster.

Estimate approved by: Robert A. Sunshine, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

S. 342, as reported, reauthorizes the programs and activities of the National Aeronautics and Space Administration for fiscal years 2000, 2001, and 2002. It is the Committee's judgment that the bill will not subject any individuals or businesses affected by the bill to additional regulation with the exception of section 203 and will not increase the paperwork requirement for such individuals or businesses. Section 203 requires the Administrator to establish overall safety requirements and plans for the International Space Station elements and payloads from cooperating parties. Cooperating party means any person who enters into an agreement or contract with NASA for the performance or support of scientific, aeronautical, or space activities in furtherance of the International Space Station program.

ECONOMIC IMPACT

This legislation provides sufficient authorization levels to sustain ongoing and new awards, cooperative agreements, and contracts in the space community. Section 203 allows for the full commercialization of the International Space Station.

PRIVACY

This legislation will not have an adverse impact on the personal privacy of individuals.

PAPERWORK

This legislation will not increase the paperwork requirement for individuals or businesses. The NASA Administrator is, however, required to submit the following reports to the Congress: (1) a detailed contingency plan for the removal or replacement of each element of the International Space Station for which Russia is responsible that lies within the critical path of the International Space Station; and (2) bi-monthly reports assessing Russian performance of work expected of them that is necessary to complete the International Space Station.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title; table of contents

This section cites the bill as the “National Aeronautics and Space Administration Act for Fiscal Years 2000, 2001, and 2002.” The section also provides a table of contents to assist finding key sections of the bill.

Section 2. Findings

This section sets forth Congressional findings regarding NASA and U.S. space policy. The findings focus on such areas as: (1) the importance of continued reforms at NASA; (2) NASA’s continual leadership in aeronautics and space research; (3) the potential impact of new technologies and future U.S. space missions; (4) the federal government’s efforts to invest in areas in which there are no commercial providers; (5) the benefits of international cooperation; and (6) the benefits of joint cooperative activities with other agencies.

Section 3. Definitions

This section defines the terms “Administrator,” “commercial provider,” “critical path,” “grant agreement,” “institution of higher education,” “major reorganization,” and “State” for the purposes of the bill.

TITLE I—AUTHORIZATION OF APPROPRIATIONS

Subtitle A—Authorizations

Section 101. International Space Station

This section authorizes a total of \$2,282,700,000 for FY 2000, \$2,328,000,000 for FY 2001, and \$2,091,000,000 for FY 2002 for the International Space Station account. The total level of funding authorized for the International Space Station for FY 2000 is \$200,000,000 below the President’s request. This reduction is from the Russian Program Assurance account. The Committee acknowledges the need for contingencies to deal with the Russian funding shortfall. However, it is difficult to justify this funding without specific plans for its use.

With the first two elements of the Station on orbit, the Committee is optimistic about the completion of the project. However, costs continue to be a major concern. Given the future budgetary constraints, NASA must pay special attention to keeping costs

within manageable levels. Both the prime and non-prime portions of the NASA contributions to the Station must be managed to ensure completion within established budgetary amounts. The Committee expects to be notified immediately about cost revisions and schedule slippages.

The Committee encourages NASA to document cost changes in terms of total life cycle costs. It is important that we ensure that any cost adjustments in a phase of the project does not have unintended cost consequences on other phases. Furthermore, NASA should move to develop more accurate cost information pertaining to the decommissioning of the Station and any outstanding technical requirements such as debris tracking by the United States Space Command and debris protection for the service module.

Section 102. Launch Vehicle and Payload Operations

This section would authorize \$2,547,400,000 for Space Shuttle Operations; \$463,800,000 for Space Shuttle Safety and Performance Upgrades; and \$169,100,000 for Payload and Utilization Operations for fiscal year 2000; \$2,623,822,000 for Space Shuttle Operations; \$481,964,000 for Space Shuttle Safety and Performance Upgrades; and \$174,173,000 for Payload and Utilization Operations for fiscal year 2001; and \$2,702,537,000 for Space Shuttle Operations; \$505,523,000 for Space Shuttle Safety and Performance Upgrades; and \$179,398,000 for Payload and Utilization Operations for fiscal year 2002. As evidenced by the Committee approval of increased funding for shuttle upgrades, the Committee supports and expects NASA to implement these upgrades as a means of building on the safety and reliability improvements of the last decade.

Section 103. Science, aeronautics, and technology

The programs authorized in this section include: (1) Space Science; (2) Life and Microgravity Sciences and Applications; (3) Earth Science; (4) Aeronautics and Space Transportation Technology; (5) Mission Communications Services; (6) Academic Programs; and (7) Future Planning.

There would be authorized to be appropriated for Space Science, \$2,196,600,000 for FY 2000, \$2,262,498,000 for FY 2001, and \$2,330,373,000 for FY 2002. The level of funding authorized in the section provides support for the New Millennium spacecraft program. This program is intended to reduce the size and development times of scientific spacecrafts, while increasing their capabilities.

There would be authorized to be appropriated for Life and Microgravity Sciences and Applications, \$256,200,000 for FY 2000, \$263,886,000 for FY 2001, and \$271,803,000 for FY 2002. The FY 2000 authorization includes \$2,000,000 for research and an early detection system for breast and ovarian cancer and other women's health related issues.

For Earth Science, there would be authorized to be appropriated \$1,459,100,000 for FY 2000, \$1,502,873,000 for FY 2001, and \$1,547,959,000 for FY 2002.

For Aeronautics and Space Transportation Technology, there would be authorized to be appropriated \$1,006,500,000 for FY 2000, \$1,036,695,000 for FY 2001, and \$1,067,796,000 for FY 2000. Of the FY 2000 funds, \$620,000,000 is to be used for aeronautical

research and technology including \$60,000,000 for the Aviation Safety Program; \$254,000,000 is to be used for advanced space transportation including \$111,600,000 for the X-33 program; and \$132,500,000 is to be used for commercial technology which includes some funding for NASA's business incubation program.

For Mission Communications Services, there would be authorized to be appropriated \$406,300,000 for FY 2000, \$418,489,000 for FY 2001, and \$431,044,000 for FY 2002.

For Academic Programs, there would be authorized to be appropriated \$130,000,000 for FY 2000 including \$46,000,000 for minority university research and education; \$133,900,000 for FY 2001; and \$137,917,000 for FY 2002.

Finally, for Future Planning, there would be authorized to be appropriated \$150,000,000 for FY 2000; \$150,000,000 for FY 2001; and \$280,000,000 for FY 2002. This funding would provide funding, one year ahead of schedule, for NASA's space launch technology activities. These activities will help to reduce technical risks further in this area. The goal of the program is to reduce space launch costs by a factor of one hundred or more.

Section 104. Mission Support

This section would authorize to be appropriated for safety, mission assurances, engineering, and advanced concepts \$43,000,000 for FY 2000; for space communications services \$89,700,000 for FY 2000; for construction of facilities \$181,000,000 for FY 2000; and for research and program management \$2,181,200,000. For FY 2001 and FY 2002, there would be authorized a total of \$2,569,747,000 and \$2,646,839,000, respectively, for the Mission Support account.

Section 105. Inspector General

This section authorizes the requested \$20,800,000 for NASA's OIG in FY 2000; \$21,424,000 for FY 2001; and \$22,066,720 for FY 2002.

Section 106. Experimental Program to stimulate competitive research

This section would provide \$10,000,000 for the Experimental Program to Stimulate Competitive Research for FY 2000; \$15,000,000 for FY 2001; and \$20,000,000 for FY 2002 from the Academic Programs account.

Subtitle B—Limitations and Special Authority

Section 111. Use of funds for construction

This section would authorize NASA and the OIG to use funds appropriated for purposes other than Construction of Facilities, Research and Program Management (excluding research operations support) for the construction of new facilities and modifications to existing facilities, provided that no funds used under this section may be spent for a project whose estimated cost exceeds \$1,000,000 until 30 days have passed after notice has been given to the Senate Commerce, Science, and Transportation and House Science Committees of the nature, location, and estimated cost of the project.

Subsection (c) of this section would require that the title of any research facility to an institution of higher education or to a non-profit acquired or constructed through use of those funds would be vested with the federal government unless the Administrator determines otherwise.

Section 112. Availability of appropriated amounts

This section would provide that, to the extent provided in appropriations acts, appropriations authorized under this bill may remain available without fiscal year limitation.

Section 113. Reprogramming for construction of facilities

This section would authorize the reprogramming of funds appropriated for construction of facilities for the construction, expansion, or modification of facilities at any location should the Administrator determine the reprogramming was dictated by new developments in aeronautics and space activities, and deferral of such action until the next authorization act would be inconsistent with the national interest in aeronautics and space activities. Any action taken by the Administrator would require 30 days' notice being given to the Senate Commerce, Science, and Transportation and House Science Committees.

Section 114. Consideration by committees

This section would require that no appropriated funds may be used for any program deleted by the Congress from requests originally made to the Senate Commerce, Science, and Transportation and House Science Committees, and no funds may be used for any program in excess of the amount actually authorized for that particular program (exclusive of construction of facility projects) unless 30 days have passed after proper notification to those Committees.

Section 115. Use of funds for scientific consultations or extraordinary expenses

This section would authorize the use of funds not to exceed \$35,000 for official reception and representation expenses.

TITLE II—INTERNATIONAL SPACE STATION

Section 201. International Space Station contingency plan

Subsection (a) restricts the transfer of funds to the Russian government. Excluded from this restriction are funds that apply to the purchase or modification of the Russian Service Module, Function Cargo Block, Russian space launch vehicles and launch services, or—until the assembly of the U.S. lab module—command and control capability. Furthermore, the Administrator is required by subsection (b) to submit a contingency plan to the Congress within 60 days of enactment of this Act.

Subsection (c) requires NASA to report to Congress on the first day of every other month on the Russian performance beginning December 1, 1999 and ending at substantial completion point as defined in Section 202. The report shall include a statement of the Administrator's judgment concerning Russia's ability to perform

work anticipated and required to complete the Station before the next required report.

Subsection (d) requires the President, within 90 days, to notify Congress of the decision on proceeding with a permanent replacement of the Russian Service Module, other Russian elements in the critical path of the Station, or Russian launch services. The decision shall include a judgment of when the assembly of the International Space Station will be completed. If the President decides to proceed with a permanent replacement of the Russian Service Module, other Russian elements in the critical path of the Station, or Russian launch services, then he shall notify Congress of the reasons and the justification for the decision to proceed with the permanent replacement and the costs associated with the decision.

Section 202. Cost limitation for the International Space Station

Subsection (a) sets cost limitations of \$21.9 billion and \$17.7 billion for the development of the International Space Station and the associated Shuttle launch costs, respectively. These limitations are to include all costs from the start of the International Space Station in 1994 through the point of substantial completion, which is defined as the time at which development costs comprise 5 percent or less of the fiscal years costs for the Station.

Subsection (b) further specifies that the limitation does not apply to operations, research, and crew return activities subsequent to substantial completion of the Station nor to launch costs in connection with operations, research, and crew return activities subsequent to substantial completion of the Station. Shuttle costs are to be determined at the rate of \$380 million per flight.

Subsection (c) would provide for automatic increases for such impacts on costs such as: economic inflation; compliance with changes in or new federal, state, or local laws; new technologies; and any lack of performance or termination of participation of any of the international partners involved in the Space Station program. The inflation provision would allow for any inflation beyond the annual 3 percent currently assumed in the out year projections.

Subsection (d) would require the Administrator to provide a written analysis of changes under subsection (c) to both the authorizing and appropriating committees of the Senate and House. The notice is to include an explanation of the basis for the change and an analysis of the impact on the assembly schedule and funding estimates.

Subsection (e) identifies the reporting and review requirements. The Administrator is required, as part of the annual budget request, to identify separately the amounts of the requested funds that are to be used for the completion of the assembly of the International Space Station. Within 60 days after the budget is submitted to Congress, the General Accounting Office is required to verify the accounting submitted by NASA to the Congress. Within 60 days after the Administrator provides a notice and analysis to Congress as required by Subsection (d), the Inspector General at NASA is required to review the notice and analysis and report the results of the review to the committees to which the notice was provided.

Section 203. Liability cross-waivers for the International Space Station-related activities

This section would provide liability cross-waivers for Space Station-related activities. These cross-waivers are legal agreements between participating parties relating primarily to first and second party liability. Each party agrees to bear its own risk of participation in a joint space activity and will not bring claims against another participating party. This provision would authorize, but would not require, NASA to enter into agreements with anyone participating in the Space Station program.

Subsection (b) sets certain limitations for the authority. Included are:

(1) waivers may not preclude a claim by any natural person or that natural person's estate, survivors, or subrogees for injury or death, except with respect to a subrogee that is a third party to the waiver or has otherwise agreed to be bound by the terms of the waiver;

(2) waivers may not absolve any party of liability to any natural person or that natural person's estate, survivors, or subrogees for negligence, except with respect to a subrogee that is a party to the waiver or has otherwise agreed to be bound by the terms of the waiver; and

(3) waivers may not be used as the basis of a claim by NASA or the cooperating party for indemnification against the other for damages paid to a natural person or that natural person's estate, survivors, or subrogees, for injury or death sustained by that natural person as a result of activities connected to the International Space Station.

Subsection (c) requires the Administrator to establish overall safety requirements and plans and to conduct overall integrated safety reviews for Station elements and payloads. NASA may undertake any and all authorized steps including removal from the manifest to ensure, to the maximum extent possible, that any elements and payloads pose no safety risks for the International Space Station.

Subsection (d) defines several key terms that pertain to this section of the bill. Included are "cooperating party", "related entity", and common terms. Subsection (e) grants NASA cross-waiver authority to any claims that may have been entered into before, during, or after enactment of this Act.

TITLE III—MISCELLANEOUS PROVISIONS

Section 301. National Aeronautics and Space Act of 1958 amendments

Section 301 amends the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451) to require the President to submit to Congress the annual aeronautics and space report in May, rather than January, and in the report to address activities carried out by government agencies on a fiscal year basis, rather than a calendar year basis.

Subsection (c) of this section would clarify section 509 of NASA's 1993 Authorization Act (PL. 102-588) which amended section 303 of the Space Act by including a provision that would authorize the

Administrator to protect information generated under an agreement entered into under section 203(c)(5) and (c)(6) of the Space Act. Specifically, the Administrator is authorized to delay the unrestricted public disclosure of technical data in the following circumstances: (1) when the information which would be considered a trade secret; (2) when commercial or financial information which would be privileged or confidential as defined by section 552(b)(4) of title 5, U.S.C.; (3) when information which had been obtained from a non-federal party participating in such an agreement; and (4) when information had been generated in the performance of experimental, developmental, or research activities in which the Administration participates. This provision would protect the data covered by this subsection from disclosure in response to a request submitted under the Freedom of Information Act (FOIA), title 5, U.S.C.

This amendment to the Space Act authorizes NASA to withhold certain technical data which would have been trade secret or commercial or financial information within the meaning of section 552(b)(4) of title 5, U.S.C., the Freedom of Information Act, if the technical data has been obtained from a non-federal party. This section permits the Agency to withhold technical data whenever it is generated in the performance of experimental, developmental, or research activities or programs conducted by, or funded in whole or in part by, the Administration.

Section 302. Use of existing facilities

This section would require the Administrator, whenever feasible, to select excess or underutilized buildings, grounds, and facilities from closed military installations or any other agency when considering the purchase, lease, or expansion of a NASA facility.

Subsection (a) of this section would provide NASA the authority to identify and make available to industry underutilized infrastructure at Stennis Space Center that could be used in launch vehicle development activities. The Senate Committee on Commerce, Science, and Transportation and the Committee on Science of the House of Representatives would be notified should NASA's existing authority be insufficient.

Section 303. Authority to reduce or suspend contract payments based on substantial evidence of fraud

This section would amend 10 U.S.C. 2307(h)(8) which currently allows the Department of Defense, the Department of the Army, the Department of the Navy, and the Department of the Air Force to suspend or reduce contract payments when there is substantial evidence that the request of a contractor for advance, partial, or progress payment under a contract awarded by that agency is based on fraud. This amendment would add NASA to the list of agencies that can use this authority.

Section 304. Notice

This section would require the Administrator to provide notice to the Senate Committee on Commerce, Science, and Transportation and the Committee on Science of the House of Representatives on reprogramming and reorganization matters. Subsection (a) of this

section would require that any reprogramming notice be provided to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives.

Subsection (b) of this section would require the Administrator to notify the Committees on Commerce, Science and Transportation and Appropriations of the Senate and the Committees on Science and Appropriations of the House of Representatives of any program, project, or activity that is preparing to undergo any major reorganization no later than 30 days prior to such reorganization. A "major reorganization" is determined to be the reassignment of more than 25 percent employees of any program, project, or activity.

Section 305. Sense of the Congress on the year 2000 problem

This section expresses the sense of the Congress that the NASA Administrator should give high priority to correcting the year 2000 problem throughout all of its computer systems to ensure effective operation in the year 2000 and beyond. NASA needs to assess the risk of the problem upon its systems and develop a plan and a budget to correct the problem for its mission-critical programs. NASA also needs to consider contingency plans, in the event that certain systems are unable to be corrected in time.

Section 306. Unitary Wind Tunnel Plan Act of 1949 amendments

This section would amend the Unitary Wind Tunnel Plan Act of 1949 to update technological terminology, including the terms "transonic, supersonic, and hypersonic", based on technological progress made over the past five decades.

Section 307. Enhancement of science and mathematics programs

This section expresses the Sense of the Congress that the Administrator should, whenever practicable, donate educationally useful federal equipment to schools that may be used to enhance the science and mathematics programs of those schools. Public schools may be defined as a public or private educational institution that serves any of the grades of kindergarten through grade 12. The Administrator would be required to submit a report of such donations as part of the President's annual budget request.

Section 308. Authority to vest title

This section would provide the Administrator with the authority to vest title to personal property in institutions of higher education or in non-profit organizations that enter into cooperative agreements with the Administration. This authority would allow NASA to reduce the total funding necessary to support cooperative agreements by allowing recipients to retain title to property acquired in the course of performance. The vesting of any title in the participant would be contingent upon the United States government not incurring any further obligations as well as many other conditions the Administrator considers appropriate.

Section 309. NASA Mid-Range Procurement Test Program

This section would amend section 5062 of the Federal Acquisition Streamlining Act (FASA).

Section 5062 of the FASA of 1994 granted NASA the authority to initiate a test under the Office of Federal Procurement Policy of alternative notice and publication requirements. In response to this legislation, NASA began to announce upcoming procurement on the Internet, rather than publish synopses in the Commerce Business Daily. The FASA included the following limitations on the test: (1) the test conducted only applies to acquisitions with an estimated annual total obligation of funds of \$500,000 or less; (2) the total life cycle cost of the test could not exceed \$100,000,000; and (3) the test would expire four years after the date of enactment of FASA.

This section would eliminate the annual total cost limit and would make the tests applicable to acquisitions with a basic value of \$2,000,000 or less (not more than \$10,000,000 with option). In addition, it would increase the dollar limitation applicable to the Test Program from \$100,000,000 to \$500,000,000, and would extend the period during which an agency is authorized to use the test for an additional two years.

Section 310. Space advertising

This section would prohibit the launch of any payload containing any material to be used for the purposes of obtrusive space advertising. This section would not apply to nonobtrusive commercial space advertising including advertising on commercial space transportation vehicles, space infrastructure, payloads, space launch facilities, and launch support facilities.

Subsection (c) of this section expresses as the Sense of the Congress that the President should negotiate with foreign launching nations agreements prohibiting the use of outer space for obtrusive space advertising purposes.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in *italic*, existing law in which no change is proposed is shown in roman):

TITLE 10. ARMED FORCES

Subtitle A. General Military Law

Part IV. Service, Supply, and Procurement

CHAPTER 137. PROCUREMENT GENERALLY

§ 2307. Contract financing

- (a) PAYMENT AUTHORITY.—The head of any agency may—
- (1) make advance, partial, progress, or other payments under contracts for property or services made by the agency; and

(2) insert in solicitations for procurement of property or services a provision limiting to small business concerns advance or progress payments.

(b) PERFORMANCE-BASED PAYMENTS.—Whenever practicable, payments under subsection (a) shall be made on any of the following bases:

(1) Performance measured by objective, quantifiable methods such as delivery of acceptable items, work measurement, or statistical process controls.

(2) Accomplishment of events defined in the program management plan.

(3) Other quantifiable measures of results.

(c) PAYMENT AMOUNT.—Payments made under subsection (a) may not exceed the unpaid contract price.

(d) SECURITY FOR ADVANCE PAYMENTS.—Advance payments made under subsection (a) may be made only if the contractor gives adequate security and after a determination by the head of the agency that to do so would be in the public interest. Such security may be in the form of a lien in favor of the United States on the property contracted for, on the balance in an account in which such payments are deposited, and on such of the property acquired for performance of the contract as the parties may agree. This lien is paramount to any other liens and is effective immediately upon the first advancement of funds without filing, notice, or any other action by the United States.

(e) CONDITIONS FOR PROGRESS PAYMENTS.—

(1) The Secretary of Defense shall ensure that any payment for work in progress (including materials, labor, and other items) under a defense contract that provides for such payments is commensurate with the work accomplished that meets standards established under the contract. The contractor shall provide such information and evidence as the Secretary of Defense determines necessary to permit the Secretary to carry out the preceding sentence.

(2) The Secretary shall ensure that progress payments referred to in paragraph (1) are not made for more than 80 percent of the work accomplished under a defense contract so long as the Secretary has not made the contractual terms, specifications, and price definite.

(3) This subsection applies to any contract in an amount greater than \$25,000.

(f) CONDITIONS FOR PAYMENTS FOR COMMERCIAL ITEMS.—

(1) Payments under subsection (a) for commercial items may be made under such terms and conditions as the head of the agency determines are appropriate or customary in the commercial marketplace and are in the best interests of the United States. The head of the agency shall obtain adequate security for such payments. If the security is in the form of a lien in favor of the United States, such lien is paramount to all other liens and is effective immediately upon the first payment, without filing, notice, or other action by the United States.

(2) Advance payments made under subsection (a) for commercial items may include payments, in a total amount of not

more than 15 percent of the contract price, in advance of any performance of work under the contract.

(3) The conditions of subsections (d) and (e) need not be applied if they would be inconsistent, as determined by the head of the agency, with commercial terms and conditions pursuant to paragraphs (1) and (2).

(g) CERTAIN NAVY CONTRACTS.—

(1) The Secretary of the Navy shall provide that the rate for progress payments on any contract awarded by the Secretary for repair, maintenance, or overhaul of a naval vessel shall be not less than—

(A) 95 percent, in the case of a firm considered to be a small business; and

(B) 90 percent, in the case of any other firm.

(2) The Secretary of the Navy may advance to private salvage companies such funds as the Secretary considers necessary to provide for the immediate financing of salvage operations. Advances under this paragraph shall be made on terms that the Secretary considers adequate for the protection of the United States.

(3) The Secretary of the Navy shall provide, in each contract for construction or conversion of a naval vessel, that, when partial, progress, or other payments are made under such contract, the United States is secured by a lien upon work in progress and on property acquired for performance of the contract on account of all payments so made. The lien is paramount to all other liens.

(h) VESTING OF TITLE IN THE UNITED STATES.—If a contract paid by a method authorized under subsection (a)(1) provides for title to property to vest in the United States, the title to the property shall vest in accordance with the terms of the contract, regardless of any security interest in the property that is asserted before or after the contract is entered into.

(i) ACTION IN CASE OF FRAUD.—

(1) In any case in which the remedy coordination official of an agency finds that there is substantial evidence that the request of a contractor for advance, partial, or progress payment under a contract awarded by that agency is based on fraud, the remedy coordination official shall recommend that the head of the agency reduce or suspend further payments to such contractor.

(2) The head of an agency receiving a recommendation under paragraph (1) in the case of a contractor's request for payment under a contract shall determine whether there is substantial evidence that the request is based on fraud. Upon making such a determination, the agency head may reduce or suspend further payments to the contractor under such contract.

(3) The extent of any reduction or suspension of payments by the head of an agency under paragraph (2) on the basis of fraud shall be reasonably commensurate with the anticipated loss to the United States resulting from the fraud.

(4) A written justification for each decision of the head of an agency whether to reduce or suspend payments under paragraph (2) and for each recommendation received by such agen-

cy head in connection with such decision shall be prepared and be retained in the files of such agency.

(5) The head of an agency shall prescribe procedures to ensure that, before such agency head decides to reduce or suspend payments in the case of a contractor under paragraph (2), the contractor is afforded notice of the proposed reduction or suspension and an opportunity to submit matters to the head of the agency in response to such proposed reduction or suspension.

(6) Not later than 180 days after the date on which the head of an agency reduces or suspends payments to a contractor under paragraph (2), the remedy coordination official of such agency shall—

(A) review the determination of fraud on which the reduction or suspension is based; and

(B) transmit a recommendation to the head of such agency whether the suspension or reduction should continue.

(7) The head of an agency shall prepare for each year a report containing the recommendations made by the remedy coordination official of that agency to reduce or suspend payments under paragraph (2), the actions taken on the recommendations and the reasons for such actions, and an assessment of the effects of such actions on the Federal Government. The Secretary of each military department shall transmit the annual report of such department to the Secretary of Defense. Each such report shall be available to any member of Congress upon request.

(8) This subsection applies to the agencies named in paragraphs (1), (2), (3), [and (4)] (4), and (6) of section 2303(a) of this title.

(9) The head of an agency may not delegate responsibilities under this subsection to any person in a position below level IV of the Executive Schedule.

(10) In this subsection, the term “remedy coordination official”, with respect to an agency, means the person or entity in that agency who coordinates within that agency the administration of criminal, civil, administrative, and contractual remedies resulting from investigations of fraud or corruption related to procurement activities.

TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 26. NATIONAL SPACE PROGRAM

GENERAL PROVISIONS

§ 2451. Congressional declaration of policy and purpose

(a) The Congress hereby declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.

(b) The Congress declares that the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities. The Congress further declares that such activities shall be the responsibility of, and shall be di-

rected by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense; and that determination as to which such agency has responsibility for and direction of any such activity shall be made by the President in conformity with section 201(e).

(c) The Congress declares that the general welfare of the United States requires that the National Aeronautics and Space Administration (as established by title II of this Act) seek and encourage, to the maximum extent possible, the fullest commercial use of space.

(d) The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives:

(1) The expansion of human knowledge of the Earth and of phenomena in the atmosphere and space;

(2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles;

(3) The development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space;

(4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes;

(5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere;

(6) The making available to agencies directly concerned with national defense of discoveries that have military value or significance, and the furnishing by such agencies, to the civilian agency established to direct and control nonmilitary aeronautical and space activities, of information as to discoveries which have value or significance to that agency;

(7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and in the peaceful application of the results thereof;

(8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment; and

(9) The preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes.

(e) The Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the National Aeronautics and Space Administration also be directed toward ground propulsion systems research

and development. Such development shall be conducted so as to contribute to the objectives of developing energy-and petroleum-conserving ground propulsion systems, and of minimizing the environmental degradation caused by such systems.

[(f)] The Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the National Aeronautics and Space Administration also be directed toward the development of advanced automobile propulsion systems. Such development shall be conducted so as to contribute to the achievement of the purposes set forth in section 302(b) of the Automotive Propulsion Research and Development Act of 1978.]

[(g)] (f) The Congress declares that the general welfare of the United States requires that the unique competence of the National Aeronautics and Space Administration in science and engineering systems be directed to assisting in bioengineering research, development, and demonstration programs designed to alleviate and minimize the effects of disability.

[(h)] (g) It is the purpose of this Act to carry out and effectuate the policies declared in subsections (a), (b), (c), (d), (e), [(f), and (g).] and (f).

TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 26. NATIONAL SPACE PROGRAM

GENERAL PROVISIONS

§ 2454. Access to information

(a) Information obtained or developed by the Administrator in the performance of his functions under this Act shall be made available for public inspection, except (A) information authorized or required by Federal statute to be withheld, (B) information classified to protect the national security, and (C) information described in subsection (b): Provided, That nothing in this Act shall authorize the withholding of information by the Administrator from the duly authorized committees of the Congress.

(b) The Administrator, for a period of up to 5 years after the development of information that results from activities conducted under an agreement entered into under section 203(c)(5) and (6) of this Act, and that would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of section 552(b)(4) of title 5, United States Code, if the information had been obtained from a non-Federal party participating in such an agreement, may provide appropriate protections against the dissemination of such information, including exemption from subchapter II of chapter 5 of title 5, United States Code.

(c) *The Administrator may delay for a period not to exceed 5 years after development, the unrestricted public disclosure of technical data that would have been a trade secret or commercial or financial information that is privileged or confidential under the meaning of section 552(b)(4) of title 5, United States Code, if the information had been obtained from a non-Federal party, in any case in which the technical data is generated in the performance of experimental, developmental, or research activities or programs conducted by, or*

funded in whole or in part by, the Administration. The technical data referred to in the preceding sentence shall not be subject to the disclosure requirements of section 552 of title 5, United States Code.

TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 26. NATIONAL SPACE PROGRAM

COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

§ 2473. Functions of the Administration

(a) The Administration, in order to carry out the purpose of this Act, shall—

(1) plan, direct, and conduct aeronautical and space activities;

(2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations;

(3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof;

(4) seek and encourage, to the maximum extent possible, the fullest commercial use of space; and

(5) encourage and provide for Federal Government use of commercially provided space services and hardware, consistent with the requirements of the Federal Government.

(b)(1) The Administration shall, to the extent of appropriated funds, initiate, support, and carry out such research, development, demonstration, and other related activities in ground propulsion technologies as are provided for in sections 4 through 10 of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976.

(2) The Administration shall initiate, support, and carry out such research, development, demonstrations, and other related activities in solar heating and cooling technologies (to the extent that funds are appropriated therefor) as are provided for in sections 5, 6, and 9 of the Solar Heating and Cooling Demonstration Act of 1974.

(c) In the performance of its functions the Administration is authorized—

(1) to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law;

(2) to appoint and fix the compensation of such officers and employees as may be necessary to carry out such functions. Such officers and employees shall be appointed in accordance with the civil-service laws and their compensation fixed in accordance with the Classification Act of 1949, except that (A) to the extent the Administrator deems such action necessary to the discharge of his responsibilities, he may appoint not more than four hundred and twenty-five of the scientific, engineering, and administrative personnel of the Administration without regard to such laws, and may fix the compensation of such personnel not in excess of the highest rate of grade 18 of the

General Schedule of the Classification Act of 1949, as amended, and (B) to the extent the Administrator deems such action necessary to recruit specially qualified scientific and engineering talent, he may establish the entrance grade for scientific and engineering personnel without previous service in the Federal Government at a level up to two grades higher than the grade provided for such personnel under the General Schedule established by the Classification Act of 1949, and fix their compensation accordingly;

(3) to acquire (by purchase, lease, condemnation, or otherwise), construct, improve, repair, operate, and maintain laboratories, research and testing sites and facilities, aeronautical and space vehicles, quarters and related accommodations for employees and dependents of employees of the Administration, and such other real and personal property (including patents), or any interest therein, as the Administration deems necessary within and outside the continental United States; to acquire by lease or otherwise, through the Administrator of General Services, buildings or parts of buildings in the District of Columbia for the use of the Administration for a period not to exceed ten years without regard to the Act of March 3, 1877 (40 U.S.C. 34); to lease to others such real and personal property; to sell and otherwise dispose of real and personal property (including patents and rights thereunder) in accordance with the provisions of the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 471 et seq.); and to provide by contract or otherwise for cafeterias and other necessary facilities for the welfare of employees of the Administration at its installations and purchase and maintain equipment therefor;

(4) to accept unconditional gifts or donations of services, money, or property, real, personal, or mixed, tangible or intangible;

(5) without regard to section 3648 of the Revised Statutes, as amended (31 U.S.C. 529), to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, Territory, or possession, or with any political subdivision thereof, or with any person, firm, association, corporation, or educational institution. To the maximum extent practicable and consistent with the accomplishment of the purpose of this Act, such contracts, leases, agreements, and other transactions shall be allocated by the Administrator in a manner which will enable small-business concerns to participate equitably and proportionately in the conduct of the work of the Administration;

(6) to use, with their consent, the services, equipment, personnel, and facilities of Federal and other agencies with or without reimbursement, and on a similar basis to cooperate with other public and private agencies and instrumentalities in the use of services, equipment, and facilities. Each department and agency of the Federal Government shall cooperate fully with the Administration in making its services, equipment, personnel, and facilities available to the Administration, and

any such department or agency is authorized, notwithstanding any other provision of law, to transfer to or to receive from the Administration, without reimbursement, aeronautical and space vehicles, and supplies and equipment other than administrative supplies or equipment;

(7) to appoint such advisory committees as may be appropriate for purposes of consultation and advice to the Administration in the performance of its functions;

(8) to establish within the Administration such offices and procedures as may be appropriate to provide for the greatest possible coordination of its activities under this Act with related scientific and other activities being carried on by other public and private agencies and organizations;

(9) to obtain services as authorized by section 3109 of title 5, United States Code, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18;

(10) when determined by the Administrator to be necessary, and subject to such security investigations as he may determine to be appropriate, to employ aliens without regard to statutory provisions prohibiting payment of compensation to aliens;

(11) to provide by concession, without regard to section 321 of the Act of June 30, 1932 (47 Stat. 412; 40 U.S.C. 303b), on such terms as the Administrator may deem to be appropriate and to be necessary to protect the concessioner against loss of his investment in property (but not anticipated profits) resulting from the Administration's discretionary acts and decisions, for the construction, maintenance, and operation of all manner of facilities and equipment for visitors to the several installations of the Administration and, in connection therewith, to provide services incident to the dissemination of information concerning its activities to such visitors, without charge or with a reasonable charge therefor (with this authority being in addition to any other authority which the Administration may have to provide facilities, equipment, and services for visitors to its installations). A concession agreement under this paragraph may be negotiated with any qualified proposer following due consideration of all proposals received after reasonable public notice of the intention to contract. The concessioner shall be afforded a reasonable opportunity to make a profit commensurate with the capital invested and the obligations assumed, and the consideration paid by him for the concession shall be based on the probable value of such opportunity and not on maximizing revenue to the United States. Each concession agreement shall specify the manner in which the concessioner's records are to be maintained, and shall provide for access to any such records by the Administration and the Comptroller General of the United States for a period of five years after the close of the business year to which such records relate. A concessioner may be accorded a possessory interest, consisting of all incidents of ownership except legal title (which shall vest in the United States), in any structure, fixture, or improvement he constructs or locates upon land owned by the United States; and, with the approval of the Administration,

such possessory interest may be assigned, transferred, encumbered, or relinquished by him, and, unless otherwise provided by contract, shall not be extinguished by the expiration or other termination of the concession and may not be taken for public use without just compensation;

(12) with the approval of the President, to enter into cooperative agreements under which members of the Army, Navy, Air Force, and Marine Corps may be detailed by the appropriate Secretary for services in the performance of functions under this Act to the same extent as that to which they might be lawfully assigned in the Department of Defense;

(13)(A) to consider, ascertain, adjust, determine, settle, and pay, on behalf of the United States, in full satisfaction thereof, any claim for \$25,000 or less against the United States for bodily injury, death, or damage to or loss of real or personal property resulting from the conduct of the Administration's functions as specified in subsection (a) of this section, where such claim is presented to the Administration in writing within two years after the accident or incident out of which the claim arises; and

(B) if the Administration considers that a claim in excess of \$25,000 is meritorious and would otherwise be covered by this paragraph, to report the facts and circumstances thereof to the Congress for its consideration.

Federal Acquisition Streamlining Act of 1994

SEC. 5062. NASA MID-RANGE PROCUREMENT TEST PROGRAM.

(42 U.S.C. 2473 NT)

(a) IN GENERAL.—The Administrator of the National Aeronautics and Space Administration (in this section referred to as the “Administrator”) may conduct a test of alternative notice and publication requirements for procurements conducted by the National Aeronautics and Space Administration. *In addition to providing any other notice of any acquisition under the test conducted under this section, the Administrator shall publish a notice of that acquisition in, or make such a notice available through, the automated version of the Commerce Business Daily published by the Secretary of Commerce.* To the extent consistent with this section, such program shall be conducted consistent with section 15 of the Office of Federal Procurement Policy Act (41 U.S.C. 413).

(b) APPLICABILITY.—The test conducted under subsection (a) shall apply to acquisitions with an estimated annual total obligation of funds of **[\$500,000 or less.]** *a basic value (as that term is defined by the Administrator)—*

(1) *of \$2,000,000 or less; or*

(2) *if options to purchase are involved, of \$10,000,000 or less.*

(c) LIMITATION ON TOTAL COST.—The total estimated life-cycle cost to the Federal Government for the test conducted under subsection (a) may not exceed **[\$100,000,000.] \$500,000,000.**

(d) WAIVER OF PROCUREMENT REGULATIONS.—

(1) In conducting the test under this section, the Administrator, with the approval of the Administrator for Federal Procurement Policy, may waive—

(A) any provision of the Federal Acquisition Regulation that is not required by statute; and

(B) any provision of law described in paragraph (2), the waiver of which the Administrator determines in writing to be necessary to conduct the test.

(2) The provisions of law referred to in paragraph (1) are as follows:

(A) Subsections (e), (f), and (g) of section 8 of the Small Business Act (15 U.S.C. 637).

(B) Section 18 of the Office of Federal Procurement Policy Act (41 U.S.C. 416).

(e) REPORT.—Not later than 6 months after completion of the test conducted under subsection (a), the Comptroller General shall submit to Congress a report for the test setting forth in detail the results of the test, including such recommendations as the Comptroller General considers appropriate.

(f) EXPIRATION OF AUTHORITY.—The authority to conduct the test under subsection (a) and to award contracts under such test shall expire ~~【4 years】~~ 6 years after the date of the enactment of this Act. Contracts entered into before such authority expires shall remain in effect, notwithstanding the expiration of the authority to conduct the test under this section.

(g) RULE OF CONSTRUCTION.—Nothing in this section shall be construed as authorizing the appropriation or obligation of funds for the test conducted pursuant to subsection (a).

TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 26. NATIONAL SPACE PROGRAM

COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

§ 2476. Reports to the Congress

(a) PRESIDENTIAL REPORT; TRANSMITTAL.—The President shall transmit to the Congress in ~~【January】~~ May of each year a report, which shall include (1) a comprehensive description of the programmed activities and the accomplishments of all agencies of the United States in the field of aeronautics and space activities during the preceding ~~【calendar】~~ fiscal year, and (2) an evaluation of such activities and accomplishments in terms of the attainment of, or the failure to attain, the objectives described in section 102(c) of this Act.

(b) RECOMMENDATIONS FOR ADDITIONAL LEGISLATION.—Any report made under this section shall contain such recommendations for additional legislation as the Administrator or the President may consider necessary or desirable for the attainment of the objectives described in section 102(c) of this Act.

(c) CLASSIFIED INFORMATION.—No information which has been classified for reasons of national security shall be included in any report made under this section, unless such information has been

declassified by, or pursuant to authorization given by, the President.

* * * * *

*AUTHORITY TO VEST TITLE TO TANGIBLE PERSONAL PROPERTY FOR
RESEARCH OR TECHNOLOGY DEVELOPMENT*

SEC. 313. Notwithstanding any other provision of law, the Administrator may vest title in tangible property (as that term is defined by the Administrator) in any participant that enters into a cooperative agreement with the Administrator if—

(1) the primary purpose of the participant is to conduct scientific research or technology development;

(2) the property is acquired with amounts provided under a cooperative agreement between the participant and the Administrator to conduct scientific research or technology development;

(3) the Administrator determines that vesting the title to the property in the participant furthers the objectives of the National Aeronautics and Space Administration; and

(4) the vesting of the title in the participant is made—

(A) on the condition that the United States Government will not incur any further obligation; and

(B) subject to any other condition that the Administrator considers to be appropriate.

TITLE 49. TRANSPORTATION

Subtitle IX. Commercial Space Transportation

CHAPTER 701. COMMERCIAL SPACE LAUNCH ACTIVITIES

§ 70102. Definitions

In this chapter—

(1) “citizen of the United States” means—

(A) an individual who is a citizen of the United States;

(B) an entity organized or existing under the laws of the United States or a State; or

(C) an entity organized or existing under the laws of a foreign country if the controlling interest (as defined by the Secretary of Transportation) is held by an individual or entity described in subclause (A) or (B) of this clause.

(2) “executive agency” has the same meaning given that term in section 105 of title 5.

(3) “launch” means to place or try to place a launch vehicle or reentry vehicle and any payload from Earth—

(A) in a suborbital trajectory;

(B) in Earth orbit in outer space; or

(C) otherwise in outer space,

including activities involved in the preparation of a launch vehicle or payload for launch, when those activities take place at a launch site in the United States.

(4) “launch property” means an item built for, or used in, the launch preparation or launch of a launch vehicle.

(5) “launch services” means—

- (A) activities involved in the preparation of a launch vehicle and payload for launch; and
 - (B) the conduct of a launch.
- (6) “launch site” means the location on Earth from which a launch takes place (as defined in a license the Secretary issues or transfers under this chapter) and necessary facilities at that location.
- (7) “launch vehicle” means—
- (A) a vehicle built to operate in, or place a payload in, outer space; and
 - (B) a suborbital rocket.
- (8) *“obtrusive space advertising” means advertising in outer space that is capable of being recognized by a human being on the surface of the Earth without the aid of a telescope or other technological device.*
- [(8)] (9) “payload” means an object that a person undertakes to place in outer space by means of a launch vehicle or reentry vehicle, including components of the vehicle specifically designed or adapted for that object.
- [(9)] (10) “person” means an individual and an entity organized or existing under the laws of a State or country.
- [(10)] (11) “reenter” and “reentry” mean to return or attempt to return, purposefully, a reentry vehicle and its payload, if any, from Earth orbit or from outer space to Earth.
- [(11)] (12) “reentry services” means—
- (A) activities involved in the preparation of a reentry vehicle and its payload, if any, for reentry; and
 - (B) the conduct of a reentry.
- [(12)] (13) “reentry site” means the location on Earth to which a reentry vehicle is intended to return (as defined in a license the Secretary issues or transfers under this chapter).
- [(13)] (14) “reentry vehicle” means a vehicle designed to return from Earth orbit or outer space to Earth, or a reusable launch vehicle designed to return from Earth orbit or outer space to Earth, substantially intact.
- [(14)] (15) “State” means a State of the United States, the District of Columbia, and a territory or possession of the United States.
- [(15)] (16) “third party” means a person except—
- (A) the United States Government or the Government’s contractors or subcontractors involved in launch services or reentry services;
 - (B) a licensee or transferee under this chapter;
 - (C) a licensee’s or transferee’s contractors, subcontractors, or customers involved in launch services or reentry services; or
 - (D) the customer’s contractors or subcontractors involved in launch services or reentry services.
- [(16)] (17) “United States” means the States of the United States, the District of Columbia, and the territories and possessions of the United States.

§ 70109a. Space advertising

(a) *LICENSING.*—Notwithstanding the provisions of this chapter or any other provision of law, the Secretary may not, for the launch of a payload containing any material to be used for the purposes of obtrusive space advertising—

- (1) issue or transfer a license under this chapter; or
- (2) waive the license requirements of this chapter.

(b) *LAUNCHING.*—No holder of a license under this chapter may launch a payload containing any material to be used for purposes of obtrusive space advertising on or after the date of enactment of the National Aeronautics and Space Administration Authorization Act for Fiscal Year 2000.

(c) *COMMERCIAL SPACE ADVERTISING.*—Nothing in this section shall apply to nonobtrusive commercial space advertising, including advertising on—

- (1) commercial space transportation vehicles;
- (2) space infrastructure, payloads;
- (3) space launch facilities; and
- (4) launch support facilities.

TITLE 50. WAR AND NATIONAL DEFENSE

CHAPTER 20. WIND TUNNELS

CONSTRUCTION OF WIND TUNNEL FACILITIES

§ 511. Joint development of unitary plan for construction of facilities; construction at educational institutions

The Administrator of the National Aeronautics and Space Administration (hereinafter referred to as the “Administrator”) and the Secretary of Defense are hereby authorized and directed jointly to develop a unitary plan for the construction of [transsonic and supersonic] *transsonic, supersonic, and hypersonic* wind-tunnel facilities for the solution of research, development, and evaluation problems in aeronautics, including the construction of facilities at educational institutions within the continental limits of the United States for training and research in aeronautics, and to revise the uncompleted portions of the unitary plan from time to time to accord with changes in national defense requirements and scientific and technical advances. The Administrator and the Secretaries of the Army, the Navy, and the Air Force are authorized to proceed with the construction and equipment of facilities in implementation of the unitary plan to the extent permitted by appropriations pursuant to existing authority and the authority contained in titles I and II of this Act. Any further implementation of the unitary plan shall be subject to such additional authorizations as may be approved by Congress.

* * * * *

§ 513. Expansion of existing facilities; appropriations; testing of models

(a) The Administrator is hereby authorized to expand the facilities at his existing [laboratories] *laboratories and centers* by the construction of additional [supersonic] *transsonic, supersonic, and*

hypersonic wind tunnels, including buildings, equipment, and accessory construction, and by the acquisition of land and installation of utilities.

(b) There is hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this section, but not to exceed \$136,000,000.

(c) The facilities authorized by this section shall be operated and staffed by the Administrator but shall be available primarily to industry for testing experimental models in connection with the development of aircraft and missiles. Such tests shall be scheduled and conducted in accordance with industry's requirements and allocation of **laboratory** *facility* time shall be made in accordance with the public interest, with proper emphasis upon the requirements of each military service and due consideration of civilian needs.

